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**REMOVAL ACTION WORK PLAN
DEKALB IRON & METAL COMPANY**

**900 Oak Street
DeKalb, Illinois**

**Prepared for
NICOR GAS**

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1. INTRODUCTION

This Removal Action Work Plan is being prepared by Nicor Gas ("Nicor") to satisfy its obligations under Paragraph 3 of the Unilateral Administrative Order issued by the United States Environmental Protection Agency (U.S. EPA) to Nicor on September 6, 2000 pursuant to the Agency's authority under Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"). Specifically, this Work Plan provides for the implementation of certain response activities to address potential impacts associated with the handling of mercury type gas regulators at the DeKalb Iron & Metal Company facility.

DeKalb Iron & Metal Company ("DeKalb Iron & Metal") is located at 900 Oak Street, DeKalb, Illinois. Figure 1-1 depicts the site location. The site is located in commercial/residential area. North and east of the site are residences and commercial buildings. South of the site are a railroad line, residences, and commercial buildings. West of the site is a vacant lot.

2. SCRAP METAL REMOVAL

Based on a conversation with a DeKalb Iron & Metal representative, the facility historically segregated regulators during initial scrap unloading into the main pile in the "west" yard. These regulators, the majority of which are spring loaded, have been removed and placed in a bin in the "east" yard. The mercury regulators primarily stored in the east yard bin were removed by Illinois EPA on September 7, 2000. Figure 2-1 depicts the site layout.

East Yard

- Remove spring loaded regulators from the bin that once contained mercury regulators and place in a one yard box.
- Screen this box of regulators for mercury vapors with a Jerome meter. If readings are less than 0.010 mg/cu m, leave regulators on site for normal processing. If mercury vapor readings are above 0.010 mg/cu m send to landfill as solid waste ^{1/}. Screening will be performed when the wind speed across the top of the box is less than 5 mph.

West Yard

Regulators received at the site from Nicor have been identified in an isolated area in the southeast portion of the main pile in the west yard. Based on conversations with facility representatives, only two shipments of scrap metal from Nicor facilities (January and June 2000) are present in the west yard. These shipments were apparently loaded onto the south/southwest portion of the main pile,

^{1/} The quantity of regulators in the east yard is too small to arrange shipment directly to an aluminum smelter.

although it is possible that the facility's normal processing activities may have resulted in the movement of some of this scrap to other areas in the pile.

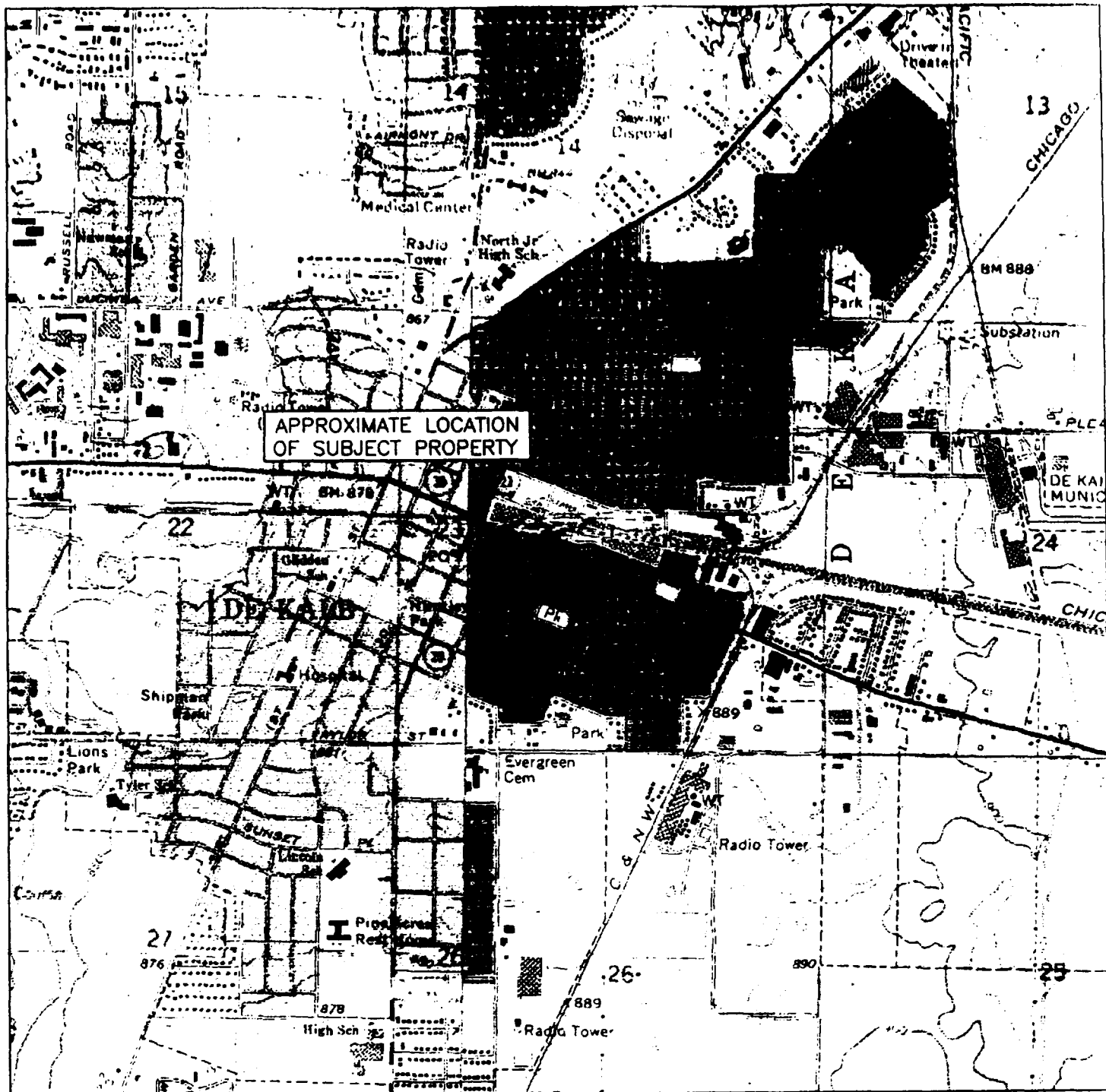


FIGURE 1-1
SITE LOCATION MAP
DEKALB IRON & METAL COMPANY
DEKALB, ILLINOIS



2000' 0 2000'

SOURCE: UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY
DEKALB & SYCAMORE, ILLINOIS QUADRANGLES

Figure 1-1

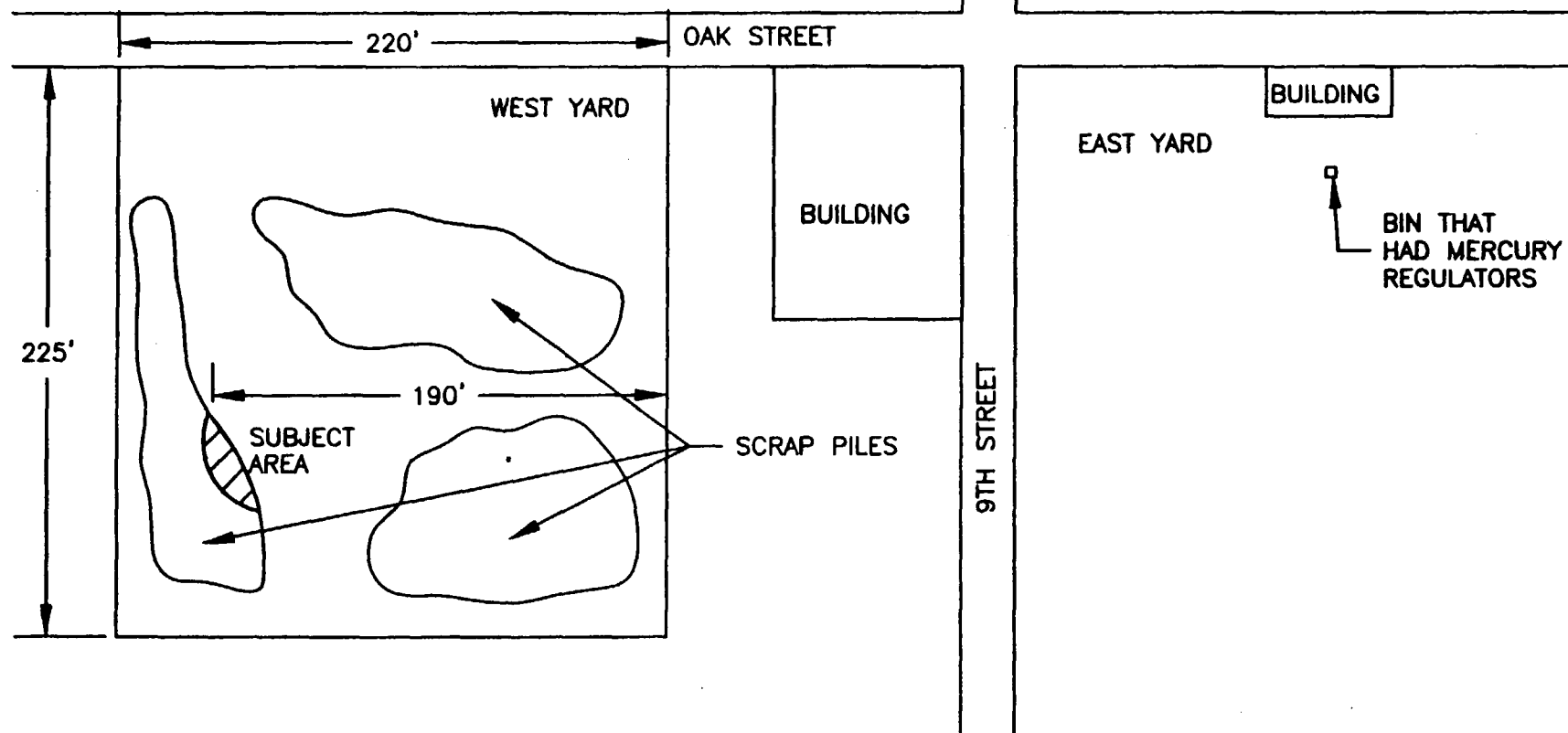


FIGURE 2-1
SITE LAYOUT MAP
DEKALB IRON & METAL CO.
DEKALB, ILLINOIS



Figure 2-1

Nicor will sort the scrap in the area where visible spring loaded regulators are identified in the southeast corner of the main pile in the west yard. This sorting will continue until all visible regulators (spring loaded and mercury-type) are removed.

The owner would prefer to use his magnet and operator to sort the scrap, which will provide an opportunity to raise the awareness of the yard's employees on what mercury regulators look like. Nicor will provide instruction to the scrap yard employees on the characteristics of the mercury regulators and safety concerns. The employees will also be instructed to call Nicor in the event a mercury-type regulator is discovered in the future.

The following procedure is proposed:

- Record mercury vapor levels around the perimeter of the scrap pile with a Jerome Meter.
- Triple-line the ground area between the mercury scrap metal pile and a one yard DOT box with plastic sheeting, for mercury-type regulators.
- Place a DOT approved rolloff box for scrap adjacent to the pile. Six readings inside the rolloff box will be taken for mercury vapor. If the average reading is above 0.010 mg/cu m the box will be rejected. Double-line the rolloff box after screening for mercury vapors.
- Position a crane with a magnet to transfer the scrap from the pile to the rolloff box, over the ten foot space that is triple-lined. Only the section of the pile where regulators have been identified will be sorted.
- Position inspectors in Level D PPE between the scrap pile and the rolloff box, and begin metal transfer. Inspect each transfer load for mercury-type regulators or beads of mercury, and remove any mercury items found and place in the one yard box. Continuously inspect the scrap pile for mercury-type regulators or beads of mercury, with emphasis on the area recently uncovered by the transfer operation. Manually remove any mercury-type regulators from the pile if they can be reached without climbing on the pile. Otherwise, remove with the magnet and carefully set on the triple-lined area for removal.
- Monitor the perimeter of the active area for mercury vapors with a Jerome Meter every hour and record readings and wind direction (see Health and Safety Plan).
- Continue transfer until no more visible mercury regulators are present.
- After all scrap in subject area has been removed using the magnet, continue to probe the scrap metal pile in the subject area for additional regulators. Scrap metal removed during this probing will be placed back on the scrap pile, generally in an area already probed. Continue this probing until it is determined that further efforts will result in little benefit in identifying additional regulators or such efforts are impractical or unnecessary. While probing, mercury vapors within

the pile will be checked as additional scrap metal is exposed. Visqueen will be applied over sections of the pile (typically 10' x 10') and then mercury vapor readings will be recorded from beneath the visqueen.

- At the direction of Illinois EPA and/or U.S. EPA, carefully remove mercury-type regulators from the one yard box and open mercury end cap to see if mercury is present, and provide either Agency with a sample, if so desired. Contractor will provide appropriate staging area and equipment for opening regulators, including secondary containment.
- When the Agencies are done with mercury regulators, secure one yard box.
- Record readings in the open scrap rolloff boxes in six locations, four in the corners and two in the center when the average wind speed across the top of the box is less than 5 miles per hour.
^{2/} If the average reading is less than 0.010 mg/cu m place material back in scrap pile. If the average reading is above 0.010 mg/cu m material will be sent to a landfill as non-hazardous waste.
- If no visible mercury beads are present on the top plastic ground liner at the conclusion of the scrap metal transfer operation, place all plastic used in any rolloff box as scrap metal designated for landfilling.
- Label all one yard boxes containing mercury-type regulators and any plastic with visible mercury, with the Yellow Hazardous Waste Label. The DOT shipping name for any mercury regulators will be "RQ Waste Mercury contained in manufactured articles, 8, UN2809, PG III (D009)."
- The site crane magnet will be screened for mercury vapors. If mercury vapor readings are above 0.010 mg/cu m it will be decontaminated.
- When any vehicle leaves the site the tires will also be screened. If readings are above 0.010 mg/cu m the tires will be decontaminated.

3. SOIL SAMPLING

3.1 Soil Screening and Soil Removal Procedures

2.0.1 West Yard

After all of the scrap metal from the designated area has been removed, a 10-ft by 10-ft sampling grid will be set up, as depicted in Figure 3-1, only in the area where regulators were observed.

The following procedure will be utilized:

^{2/} This may require setting up a wind screen around three or four sides of each rolloff box.

- Set out a 10-ft by 10-ft grid with flagging, over the entire area, labeling the flags from 1 to 4 and A to D, as depicted in Figure 3-1.
- Using the Jerome 431-X or 411 meter, with particulate filter, take mercury vapor readings at each flagged area under a plastic cup after a minimum of five minutes. Record results. At any location where a positive reading is obtained, a second reading will be taken. The average result will be utilized.

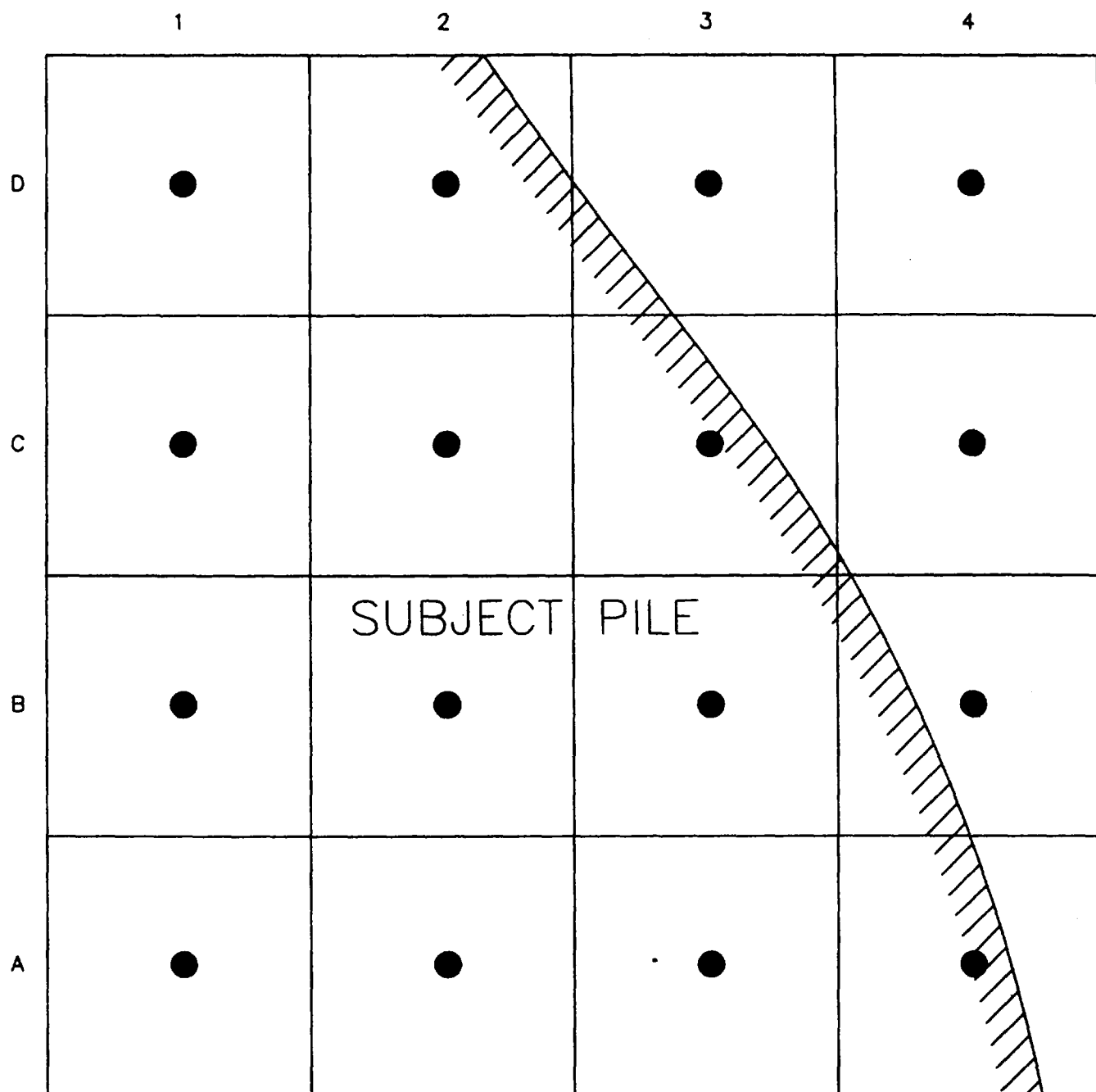


FIGURE 3-1
SAMPLE LOCATION MAP
DEKALB IRON & METAL CO.
DEKALB, ILLINOIS

CADFILE:HG-DEKALB-1

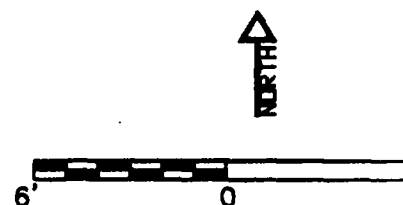


Figure 3-1

- At any location where a reading above 0.010 mg/cu m is obtained, a backhoe will remove 6 inches of soil from the 10-ft by 10-ft area, and the area will be re-tested with the Jerome Meter. This procedure will continue until the entire area achieves 0.010 mg/cu m mercury vapor.
- The excavated soil will be loaded into a lined rolloff box.
- The flags will remain in place at the completion of the Jerome meter screening.
- At the completion of this phase, the soil rolloff box will be placed in an area subject to owner's and U.S. EPA approvals. The box will be sampled, and covered.
- The soil will be analyzed to determine if it will be disposed of as solid waste or hazardous waste.

3.1.2 East Yard

The bin that contained mercury regulators was located on concrete. A 10 foot x 10 foot grid will be set up around the box. Five mercury vapors readings will be recorded around the four corners and the center where the box was located. The same procedure for recording readings on the west yard will be utilized. If all readings are less than 0.010 mg/cu m, no additional sampling is proposed. If readings are above 0.010 mg/cu m, the concrete will be washed and all water generated will be consolidated with decontamination water from the west yard.

3.2 Soil Confirmation Sampling Protocol

The following protocol will be used for confirming that the mercury has been successfully removed from the site.

- From each row (in the east to west direction, or 1 to 3 on Figure 3-1), a soil sample from the location having the highest final Jerome Meter reading will be sampled from 0 to 6 inches using a hand trowel and pick ax and shovel if the ground is too firm. The soil will be placed into a stainless steel mixing bowl, mixed thoroughly, and placed in four 4-ounce clean laboratory jars for analysis of total mercury, TCLP mercury, pH, and soil moisture.
- All samples will be labeled with the site, date, time, and sample grid location, and initialed by sampler. All samples will be placed in individual plastic bags and sealed to avoid cross contamination, and immediately placed in a cooler with ice. Care will be taken in filling the coolers to avoid breakage. A chain of custody will accompany the samples to the laboratory.
- Between samples, the sampling equipment will be cleaned with the following protocol:
 - Alconox Wash with potable water
 - Tap water dip rinse
 - Mercury decontamination solution
 - Tap water dip rinse, separate container

Distilled water spray rinse

- The samples will be shipped to Test America's Bartlett Laboratory for analysis of total mercury using SW846 – method 7471A, which has a method detection limit of 0.04 mg/kg. TCLP mercury will be tested by SW846 – method 7470A which has a method detection limit of 0.0002 mg/L. In addition, the soil pH and % solids will be measured.
- Duplicates will be collected for total mercury on one in ten samples. One field blank and one trip blank will be collected daily when conducting confirmation sampling.
- Test America will provide results four working days from receipt. This will allow time for retesting if the results are outside of the calibration range, and the completion of the necessary QA/QC checks as described in the QAPP.
- Any confirmation samples above the objectives will necessitate further soil removal and additional confirmation testing.

4. SOIL CLEANUP OBJECTIVES

4.1 West Yard

The DeKalb Iron & Metal facility is located in an residential/commercial area. Response actions conducted by Nicor at the site will be deemed complete upon satisfaction of appropriate remediation objectives for mercury as provided at 35 Ill. Adm. Code Part 742. For reference purposes, the Tier 1 remediation objective for mercury are as follows:

Ingestion

Residential	23 mg/kg
Industrial/Commercial Objective (I/C)	610 mg/kg
Construction Worker Objective (CW)	61 mg/kg

Inhalation

Residential	10 mg/kg
Industrial/Commercial Objective (I/C)	540,000 mg/kg
Construction Worker Objective (CW)	52,000 mg/kg

Soil migration to ground water

TCLP/SPLP	0.002 mg/L
or	

<u>Soil pH</u>	<u>Total Mercury, mg/kg</u>
4.5 to 4.74	0.01
4.75 to 5.24	0.01
5.25 to 5.74	0.03
5.75 to 6.24	0.15
6.25 to 6.64	0.89
6.65 to 6.89	2.1
6.90 to 7.24	3.3
7.25 to 7.74	6.4
7.75 and above	8.0

Nicor shall utilize the remediation objectives provided above or establish site specific standards or remediation strategies consistent with the requirements of 35 Ill. Adm. Code Part 742.

5. CONTRACTOR AND SCHEDULE

Heritage Industrial Services, L.L.C. will be the removal contractor under the direction of Huff & Huff, Inc., consultant to Nicor Gas. Superior Special Services, Inc. in Port Washington, WI and Salesco in Phoenix, AZ will be used to retort high level mercury waste. The soil will be shipped to EQ landfill in Belleville, Michigan, or Envirotech of Illinois, Inc. in Harvey, Illinois if it is a hazardous waste. If the soil is not a hazardous waste it will be shipped to Waste Management's CID facility. The scrap metal will also be shipped to one of the three landfills as a non-hazardous waste: Waste Management's CID facility in Calumet, Illinois; Republic Services Inc.'s facility in Three Oaks, Michigan; or Allied's facility in Newton County, Indiana. Test America will conduct the analytical work.

Based upon the coordination requirements, the Contractor will mobilize to the site no later than three days after authorization from U.S. EPA and site access is secured. The scrap metal removal and subsequent sorting is expected to take two to five days, the soil screening/soil removal two days, and confirmation sampling one day. Analytical results will be obtained in four business days. Thus, the following schedule is planned:

	<u>Business Days</u>
- Authorization to Proceed	0
- Mobilize to Site	3
- Screen surface in east yard where mercury regulators were once stored	4
- Remove visible mercury regulators in pile in west yard	5
- Sort through waste pile	6-10
- Soil Screening and Soil Removal	10
- Confirmation Testing	11
- Analytical Results Received	15
- Remobilize to Site	17

- Complete Soil Removal	19
- Confirmation Testing	20
- Analytical Results Received	24

Thus, approximately four weeks will be needed to complete the work at this facility. Remedial Action Completion Report will be prepared and issued within six weeks of completion of the removal action. This will allow time for receiving manifests from processing at a retort facility and from landfilling.